HEALTH

EDITED BY

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Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

The white elephant at the London Zoo' has been exciting attention of late among public and scientists; but the general result of the visit of the great pachyderm appears to be, on the whole, disappointing. Authorities in elephantine matters state that, so far from such an elephant being an uncommon sight, specimens exhibiting similar markings to those seen in the animal at present in the Zoo' are frequently met with in India. The elephant is not a white elephant at all, but merely one in which a deficiency of the ordinary skin-colour exists in certain parts of its body. A purely white elephant is an *albino* animal. The human race, as well as the familiar cats and rabbits, develop "albinos"; the ordinary colouring-matter in such forms being absent from hair, skin, and even from the eyes. White mice and white rats are also "albino" varieties of their respective species; and a curious fact has been noticed, namely, that albino-cats, with pink eyes, are usually deaf. Certain birds are also liable to produce albino-varieties of their species; and this tendency to variation in colour is, therefore, strongly marked in many groups of the animal world.

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Some curious cases have been recorded in which the tendency to "albinism" in man (Latin, *albus*, white) has been shown to be inherited and transmitted, sometimes from remote ancestors. In one case, two brothers married two sisters (their first cousins), no trace of "albinism" being present in any one of the four persons, nor any relation being an albino; yet, as Mr. Darwin tells us, the seven children born to these couples were all perfect "albinos." Mr. Darwin also placed on record the curious fact that albino-animals appear singularly liable to be attacked by insects. An albino-negro, contrary to the experience of his race, was seen to be peculiarly sensitive to insect-bites; and light cattle in the West Indies suffer from insect attentions, while their dark-coloured neighbours escape. Sir Erasmus Wilson tells us that while albinism is met with in every race, it is most common among races which have been subjected to unhealthy surroundings. It is said also to be more common in females than in males, and while in its general tendency it is a weakening condition; yet, instances are not wanting in which albinos have presented a high degree of bodily and mental vigour. In the development of local or general colour-variations, whether among men or elephants, we should recognise that we are really dealing with laws of variation, which, in their causation and extent, are at present practically unknown to us.

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Some time ago we referred in Health to the proposal of a medical man that life might be saved at sea by inflating the skin-tissues of animals with air, and by thus using them as buoyant supports to the shipwrecked. A new departure in this direction has been taken, it seems, by enterprising showmen. The fat ladies and gentlemen exhibited at fairs have always formed objects of interest to ordinary humanity; but the development of a fat man would seem to be an easier matter than has been generally supposed. We are now informed that a fat exhibit is produced by blowing air through a hollow needle into the skin-tissues, the distension thus produced giving to the subject of the operation the appearance of enormous stoutness. If this suggestion be correct the interest attaching to the fat men and women of the caravans will certainly decrease. Nothing is said regarding the injurious effects of the practice, but there can be no doubt that, in time, serious results might follow such an abnormal distension of the tissues.

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All fat subjects, however, and certainly many who have been exhibited, have by no means owed their size and weight to air and the showman's ingenuity combined. A list of the weights of undoubted fat persons reveals some astonishing details in respect of the abnormal extent to which the human frame is capable of being stretched. Daniel Lambert weighed 32 stone at 23 years of age, but even in that condition this portly person was able to enjoy a walk from Woolwich to London. Later on Lambert reached a maximum weight of 52 stone 11 lb. One Edward Wright weighed 44 stone; and in the case of one woman who died at 41, the heart weighed 36 ounces, and the liver 118 ounces; the usual weight of the female heart being 9 ounces, and of the liver 45 ounces. In America lately a young man's heart (normal weight 10 ounces) weighed 40 ounces. The subject in this case was 18 years of age.

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The modern dress hat, facetiously denominated by such familiar names as the "stove-pipe," and "chimney-pot," appears, like other items of dress, to be gradually attracting the notice of dress reformers. It is difficult to account for the popularity of the "tall hat" as an article of attire. Like most other things, it has passed through an evolution, the later stages in which have obscured, wholly or in greater part, the origin of the head-gear in question. Whatever its direct descent, from steeple-cowled Puritan, or from Cavalier-feathered and broad-brimmed hat, the modern style seems to have settled down amongst us as a stable article of attire. Without it no man regards himself as quite "dressed"; and even the opera-hat has been moulded, springs and all, into the same line of development. But with it, no mere man is quite comfortable. On the other hand, in windy weather, it is a nuisance; a shower of rain spoils it; at meetings and elsewhere, it is a kind of white elephant, and is liable to be damaged and ruffled, re-acting thuswise upon its owner's temper; while it is needlessly high, and, in respect of its want of ventilation, becomes insanitary in a high degree, as far as head and hair are concerned. "Who shall deliver us, then, from the 'stove-pipe' of to-day?" is a cry that has often been heard, but remains unanswered still.

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The popularity of the tall hat dates, in our opinion, simply from that sense of the "fitness of things" which arises from a long-continued and perpetuated association

of head and its gear. It would take years, doubtless, before we became accustomed to regard any other form of hat as the "correct thing" to wear. Yet when we visit other countries and mingle long with foreign nations, whose hats are of varied pattern from our own, we speedily become accustomed to the new surroundings, and cease to marvel at the difference, because the variation from our own type is the normal and natural style of dress. We shall doubtless follow the lead, in hats as in dress, of any enterprising persons in high places, who, in the future, may be bold enough to strike out a new line in head-gears. If any such change is being contemplated, we would desire to recommend the elegant John Knox cap, and the Leonardo da Vinci cap—both made of velvet, both neat in style, and both warm and convenient in every sense—as a suitable departure for the new evolution. But we shall not see the tall hat relegated to the region of the dodo, yet awhile.

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We beg to call the attention of our readers to the letter published in our present issue, and written by "One of our Contributors." The state of matters therein described is unfortunately anything but new. We are distinctly of opinion that our correspondent, in his own showing of the facts, has a very clear case against the builder of the house or the persons from whom he obtained his dwelling, guaranteed and certified to be sanitarily complete. A man who fails to connect house drains with the main, not only "scamps" his work, but, we should hold, actually leaves his contract uncompleted. As he must have charged for drain-laying on a scale which presumed the perfect discharge of his functions, it is clear he has pocketed money for which he has not given an equivalent in work. This is the plain business view of the matter. We say nothing of the health aspects of the question or of the morality of such a transaction. Our correspondent has a good case, we believe, if he elects to invoke a legal remedy. But what about the sanitary inspections and supervision of the building operations? Who is to inspect the inspectors?

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Apropos of the above case, we find that in the Glasgow Sheriff's Court, a householder lately obtained a verdict giving damages against a builder who had constructed drains in such a fashion that obnoxious gases escaped from them into the house, and caused the illness of the tenants. This is a step in the right direction. When householders appeal to the law for bare justice, it is unlikely that satisfaction will be refused them.

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Most readers have heard of the affection named "housemaid's knee." This is a malady affecting the knee-joint, and supposed to be produced through injury inflicted by the subject kneeling on hard floors. It affects the curious little pad or *bursa* connected with the knee-cap, and which is so interposed as to limit, like a pulley-wheel, the friction which takes place between the knee-cap and the adjacent structures in the movement of this joint. A curious observation has recently been made, regarding the occurrence of "housemaid's knee" in clergymen. A medical man writing to a contemporary, gives three cases in which clergymen consulted him for an affection of the knee which was found on examination to be connected with inflammation of the aforesaid "bursa." In each case, the affection was caused by kneeling at devotions, without the precaution being taken of having a cushion whereon to rest. The moral of this observation is clear, namely, that not only the clergy, but all other persons whose duties compel them to kneel on hard substances, should see that the knees are duly protected from injurious pressure.

Original Essays

"Life is not to live, but to be well."—*Martial.*

THE AGES AND CONJUGAL STATE OF THE PEOPLE.

Compiled from Vol. III. of the Census for 1881.

By Percy Russell.

One of the most interesting, instructive, and suggestive of the sections of the late Census returns is undoubtedly that relative to the ages of the people, and their condition as to marriage. The latter is generally held as a good criterion of the prosperity of the people, and most decidedly the former may be fairly taken as indicative of their condition as to health. The comparison, too, on both these heads with the corresponding returns for the year 1871 is of great value, serving as it does to show what progress, if any, has been made in the greater conservation of human life among us.

Taking ages first, it appears that with a total population of 25,974,439, including 13,334,537 females, in 1881, the number of males under 1 year was 341,434, and of females 342,978, against 344,742, and 342,148 for 1871. Under 5 years, in 1881, the males numbered 1,757,657; females, 1,763,207, against 1,536,464 and 1,534,812, the corresponding figures for 1871. Taking 20 years as the next standard point, we find that the males numbered in 1881, 1,112,354, and the females, 1,215,872, against 951,917 and 1,052,843, the corresponding figures for 1871. Advancing another decade to 30, the number of males in 1881 is stated to be 840,259, and females 905,210, against 746,320 and 813,675 for 1871. As we go on by leaps of 10 years, the numbers, of course, fall rapidly; thus, at 40 years of age, the males were in 1881 672,971, females 726,383, against 590,097 and 639,705 in 1871. At 50, the figures drop for males in 1881 to 485,758, and 536,317, and 455,788, and 488,901 in 1871. At 60, the males in 1881 numbered 340,555, females 387,067, against 294,675 and 328,010 in 1871. At 70, in 1881, males are returned at 158,333, and females at 191,622, against 149,887 and 1,740,086 in 1871.

Passing on to 80, in 1881, the males number 41,171 and the females 54,579, against 38,573 and 51,265 for 1871. At 85 for 1881, the numbers drop for males to 11,929, and for females, the latter always maintaining their greater tendency to longevity, to 18,058, against 11,685 and 17,896 in 1871. At 90 years of age we find a small band of veterans numbering in 1881—males 2,330, and females 4,460, against 2,383 and 4,338 for 1871. At 95 in 1881, the males are reduced to 359 and the females to 871, against 390 and 855 in 1871. Finally, at the age of 100 years and upwards, the males in 1881 are set down at 44, and the females at 97; against 41 males and 119 females in 1871. It is evident, for one thing, that the woman's chance of increased longivity augments as against the man's at all ages, and it is also clear that, consequent on this, the inequality in the number of sexes is greater at each succeeding decade. It will be found that if we take the children under one year it appears that in 1881 the males number 376,890 to 376,223 females showing the excess to be exactly the other way—viz., on the side of the males. The same remarkable fact is clearly brought out by an analysis of the returns for 1871, where we find under the age of one year that the males numbered 344,742, against 342,148 females. Now, when we come to

the age of two years, we find the proportion begins to change. Thus, in 1881, at that age, the number of boys was 351,616, against 352,793 girls. Thus early, although one might expect a different result, does the female begin to display her greater vital power. This is a subject which has not, perhaps, received sufficient practical attention among us; but it is decidedly one of very great interest and importance to the whole community.

Among what may be termed the curiosities of these returns, are the following:—Under the age of 15 years there are returned 1 prison officer, 3 scripture readers, 1 medical assistant, 22 members of the subordinate medical service, 84 lecturers and professors, 1 author, 10 painters, 3 engravers, 131 musicians, 12 art students, 37 photographers, and 84 actresses—for be it observed that the whole of the above mass of precocity is exclusively female. The number of domestic servants at this age we expect to be large, and find it accordingly to be 430,177, but we hardly looked to find 2 females described as brokers, and 130 as commercial clerks, and still less 3 more as pointsmen or level crossing men! There are 3 girls of this tender age down as carmen and carters, 32 as bargemen, 2 under the head of grooms, 18 under that of fishermen 2 under that of knacker, 27 under that of bookseller, 99 under that of cutlers, 87 under that of whipmaker, 10 under that of innkeeper, 148 under that of coal-miners, 15 under that of ironstone-miners, 28 as copper-miners, and 267 as working in tin. No less than 344 girls, all under 15, are employed in nail-making, 63 in anchor and chain, and 72 in other iron manufactures. Only three are returned as crossing-sweepers, but 54 are described as rag-gatherers, and 95—strange as sad—are tabulated as "general labourers!" There being at all ages no less than 2,893 thus designated. These are but a few samples of what is the melancholy side of these returns; but much more that is equally startling and socially significant may be easily gleaned from these tables, which set down everything good or bad with an inexorable precision.

Touching the condition of the people as to marriage, we find that of males, married at various ages, there are returned at the age of 15 years, 5,860; at 20, 245,466; at 25, 1,217,714; at 35, 1,170,779; at 45, 859,840; at 55, 562,693; and at 65 and upwards, 314,546. The widowed males at the same ages are, respectively, 98; 2,486; 26,474; 51,689; 73,928; 99,995; and 180,124. Regarding the females returned as married, the numbers were at 15, 32,416; at 20, 402,019; at 25, 1,343,802; at 35, 1,164,949; at 45, 810,420; at 55, 471,321; and over 65, 213,035. The widows at these ages were, respectively, 218; 4,852; 52,019; 124,089; 193,680; 251,811; and 372,377. In some cases it appears that a few persons, described as "married" were stated to be under 15 years of age, but all these have been classed with married persons aged 15 and under 20.

Such is the statistical summary of the conjugal condition of the people according to the census of 1881. If we revert to the corresponding returns for 1871, we shall obtain the following results. Married males at 15 years of age and under 20, 5,951; at 20, 219,197; at 25, 502,846; at 30, 559,537; at 35, 524,427; at 45, 426,872; at 55, 276,501; and at 65, 139,485. The number of wives at the corresponding ages were respectively, 34,573; 361,317; 584,733; 598,343; 536,598; 404,149; 236,979; and 104,110. The returns of 1871, which are in several respects on a different plan from those for 1881, enable us to ascertain the proportion of married persons to the utmost limits of age, and thence we note that at the age of 80, there were 14,392 husbands and 7,524 wives; at 90, only 509 of the former, and 221 of the latter; and at 100 and upwards, just 5 of each sex, while at this age the widowers were 31 to 103 widows.

Returning to the last census, it appears thence that taking all ages of males there were unmarried, 7,828,210; married, 4,376,898; and widowed, 434,794. As of these no less than 4,728,466 were under 15 years of age, it is obvious that a very large proportion indeed of males had entered into the married state. Turning to the female side of the account, we find 7,897,529 unmarried, 4,437,962 married, and 999,046 widowed. Of the unmarried, 4,740,125 were under 15 years of age. At the age of 25 years, however, the numbers of unmarried to married females were 576,103 to 1,343,802; at 35, these figures were, respectively, 233,820 to 1,164,949; and at 65 and upwards they were 67,670 unmarried to 213,035 married females. The males married to unmarried were at the same age 314,546 and 40,892.

One of the noteworthy features of these vital statistics is the great waste of life that must necessarily occur among male infants before the age of two years, and which is the cause of the great disparity in the numbers of the sexes at all succeeding ages.

Regarded as a whole, these returns are in themselves a treasury of valuable information, but it is surely a pity that in making up the figures more care was not taken to facilitate comparative reference to all the corresponding statistics for 1871.

STORIES OF SCIENCE AND CRIME.

FIFTH PAPER.

CASES OF FASTING AND STARVATION (*continued*).

Many cases of "fasting" occur in the history of hysterical girls, who, through some freaks of a disordered imagination, either fast in reality, or make pretence of abstaining from food. Such cases, through a natural process of development, either become elevated into veritable miracles and wonders, or are made sources of pecuniary gain and profit by interested relatives or others. Louise Lateau, whose case has been fully described in Health (see No. 23, page 356), for example, was alleged to have taken no food for twenty months—and, in this instance, a hysterical girl was regarded as a veritable saint, and was esteemed a person living under Divine care of a special order, and as having evinced marks and signs of equally mysterious and supernatural kind. In the case of Louise Lateau the evidence presented of her fasting is of a kind likely to satisfy no independent observer. Again, in cases of another kind, in which the subjects are hysterical girls as before, the parents or friends are often tempted to make an exhibition of their so-called "fasting powers." Here, the patients may abstain from all food (excepting water) for a time, or, when imposture enters into the case, they may be secretly fed. It is a well-known medical fact that the hysteric type of mind is precisely that which most readily lends itself to deception and fraud.

In considering cases of starvation, one prominent fact requires to be carefully kept in view. It should be borne in mind that *on water alone*, a human being can subsist for many days—losing weight and substance, no doubt, as the days pass, but still retaining his vitality, and capable of warding off the approach of death for a period

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

varying with the state of the body, age, health, and other conditions. It may be said that water is the only food which is capable, of itself, and in the absence of all other forms of nourishment, of sustaining life for lengthened periods. The reason why water thus appears to pass into the first rank of foods, is not difficult to discover. Our bodies largely consist of water; it enters into the composition of every tissue and of every fluid; it is continually being excreted or given off in the processes of waste which attend life, and it is demanded for the solution of the solid parts of the food, and in other important bodily operations. Water is thus a highly essential constituent of the bodies of animals and plants. Physiological statistics place the importance of water very forcibly before us. It forms more than two-thirds of the whole weight of a man's body, and its amount in the various tissues and fluids is shown in the following table :—

Quantity of Water in 1,000 Parts of the Following Tissues and Fluids.

Teeth	100	Milk	887
Bones	130	Pancreatic Juice (Sweetbread)	900
Cartilage or Gristle	550	Lymph	960
Muscles	750	Gastric Juice (Stomach)	975
Ligaments	768	Perspiration	986
Brain	789	Saliva (Mouth)	995
Blood	795		
Bile	880		

Forming as it does such an important element in the bodily composition, it is not surprising to find that while the other constituents of the body disappear under the influence of starvation, a supply of water enables us to hold out against death for a longer or shorter period. All cases of prolonged fasting have depended on water as their means of support. We see the high importance of water if we compare cases of starvation in which no water was to be had, with those in which water was supplied. Horses can last only five days on an average in the absence of solid food and water, but on water alone they can live for twenty-five days. In man, death occurs in from six to ten days when a total want of solids and water is experienced, while on water alone, as we shall hereafter note, human life is capable of being greatly prolonged. Dr. Tidy has summed up in his recent manual of medical jurisprudence, the periods at which death occurred in cases of starvation, without, however, taking into account access to water. Four of these cases occurred from the seventh to the tenth day. Of these four cases, one was that of the "Welsh Fasting Girl" already noted. Another case was that of a Captain Gairdner, who figured amongst the Patagonian missionaries of 1851, and who left a diary, in which he described his sensations. After being nearly sixteen weeks with an insufficient supply of food, the Captain lived for six or seven days without any food at all, and died on the day of the last entry in his diary. In other cases death has occurred between the eleventh and eighteenth days of fasting; between the eighteenth and thirtieth days; and between the thirty-first and fortieth, forty-first and fiftieth, and fifty-first and sixtieth days respectively. Reference will be made hereafter to special cases included in the foregoing statistics.

Cases of *recovery* from starvation became highly interesting, especially in view of the fact that, provided with even a moderate amount of water, life may be preserved for an astonishing period. Eight men and a boy were enclosed for eight days in a coal-mine, and were ultimately rescued alive; and the miners at Tynwydd lived nine days in a chamber amid *compressed* air without solid food, but with plenty of water, recovery taking place after the rescue. A boy of fifteen years of age bore his imprisonment as hardily as the men. In another case, a miner was detained in a pit for twelve days without food, but with plenty of water. The atmosphere in which the man was imprisoned was highly impure. On being rescued he was found to be much emaciated, and his pulse, besides being feeble, stood at 112 per minute. He recovered after some weeks' attention. On the fourth day after his rescue he was found to weigh 28 lb. less than his normal weight. Some workmen, who were dug out alive from a vault which had collapsed, lived fourteen days on water alone; and a case is reported by Dr. Sloan, of Ayr, in which a man aged 65, of spare build, was taken out alive from a coal-mine in which he had been imprisoned for twenty-three days. For the first few days he had drunk water containing a large quantity of iron, but after this, becoming weak and unable to move, he lay down at some distance from the source of water-supply.

Mauthner on the Influence of the Electric Light on the Human Eye.—In discussing the value of any particular source of artificial light, says Professor Mauthner (*Wien. Allgem. Med. Zeit.*, No. 10, 1883), three qualities must be especially regarded :—1. The steadiness of the light; 2, the strength of the light; 3, its composition. From its complete failure in point of steadiness, the arc light must be at once rejected from the category of lights suitable for the human eye. The incandescent lamp, on the other hand, deserves a prominent—if not a leading—position. As regards its strength or intensity, also, it fulfils all requirements, since it can be modified or intensified at will. The composition of the lights habitually used hitherto has shown a preponderance of yellow rays. In the electric light, however, the short-wave rays predominate—*i.e.*, the violet rays. To the human retina, blue or violet tints are more agreeable than yellow, and hence from its composition, as well as from its steadiness and adaptability, the light of the incandescent lamp is especially adapted for the use of the human eye. Distinctness of vision and the perception of colour are both increased under the electric light—facts which might be theoretically held to involve an overstrained retina. Such a theory is not, however, borne out by practical experience; it is only where the light employed is unsteady that any ill effects have been observed. It may be considered as an established axiom, that the brilliancy and composition of any light are as nothing, in respect of its value as an illuminating medium for ordinary uses, compared with its constancy and steadiness. In the incandescent lamp no combustion takes place, and hence no consumption or vitiation of atmospheric air is induced. From a theoretic point of view, therefore, no objection can be raised against the use of the incandescent electric lamp; its full value as an illuminator is probably not yet ascertained.

Medical and Sanitary Exhibition, 1881.—Award of Merit.—Diabetes. Van Abbott's Gluten Bread, and all other suitable Foods for Diabetic Patients. Dietary Tables and Price Lists post-free on application. Van Abbott, 5, Princes-street, Cavendish-square, W.—Delicate Children and Adults Suffering from Nervous Depression. Van Abbott's Hypophosphite of Lime Biscuits, for Delicate Children, especially those suffering from Deficiency of Bone, Weak Joints, or Debility, and Adults suffering from Nervous Depression. Each Biscuit contains five grains of the Hypophosphite of Lime. "Quite free from disagreeable taste, and taken willingly by Children, and certainly provide an excellent means of administering this valuable compound. Our analysis proves the accuracy of the printed descriptions on the labels of the boxes. The Biscuits were suggested by Mr. W. Adams, of the Orthopædic and Great Northern Hospitals." — *Lancet*, Nov. 4, 1876.—Van Abbott, 5, Princes-street, Cavendish-square.—[Advt.]

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

BEAUTY-CULTURE.

By Philip Foster, M.D.

PART FIRST.

"Beauty itself doth of itself persuade
The eyes of men without an orator."—*Shakespere.*

Beauty, the time-immemorial theme of poet, painter, and sculptor, always has been, and, as long as the human heart continues to throb with its present passions and emotions, must remain the most valued of possessions. I say "possessions," for all, or nearly all, the elements that constitute it—a finely-moulded form, elastic step, clear complexion, bright and sparkling eyes, ruby lips, chiselled features, and, last, but not least, expression, while to some extent natural gifts, are in a great degree the result of physical and mental cultivation. Paints, powders, and washes, the relics of a barbarous age, are powerless for good, although not for evil; and only by training the body and mind can our object be secured. The true art of beauty-culture, then, consists in improving the health and in developing and regulating the mind. While neither questioning or admitting the dictum that "beauty is, when unadorn'd, adorn'd the most," it must be conceded that clothes may be becoming or unbecoming, and, consequently, dress will have to be briefly considered.

"Personal health" cannot be too frequently brought before the reader; and therefore, although the subject is being discussed in these columns, I shall offer no apology for the following suggestions. The influence of pure air in the promotion of health and prevention of disease is too well known to need enforcement here. Some part of every day should be spent out of doors, as open and healthy a neighbourhood as possible selected to live in, and the house effectually drained and ventilated.

For efficient drainage, the pipes, especially at their joints, must be free from leakage; the main drain, which should not be more than six inches in diameter, must communicate with the common sewer, be properly trapped after it has left the house, and ventilated between the trap and the house, so that any sewer-gas that may find its way through the trap may escape without entering the house; the pipes must be kept free from obstruction, and be easily accessible. The pipe for ventilating the main drain should be three inches in diameter, should join the drain as it issues from the house, and pass up the front of the house quite to the roof. Freedom from obstruction will best be secured by the pipes having a steady fall, being free from sharp turnings, and frequently flushed. Grease, a frequent cause of obstruction, may be got rid of by pouring down the sink occasionally—say once a month—a pound of washing soda dissolved in two gallons of boiling water.

The great objection, common until lately, to all methods of ventilation, has been the production of draughts. This may, however, be overcome by making the air enter the room in an upward direction. The simplest mode of effecting this is to raise the lower sash of the window two or three inches, and have a piece of wood exactly fitted into the vacant space at the bottom. A perpendicular passage for the air is thus formed between the upper part of the lower and the lower part of the upper sash. The foul air is best got rid of by making an opening into the chimney near the ceiling. More consecutive hours are passed in our bedrooms than in any other part of the house, and consequently they should be large, and the ventilation as perfect as possible. I am convinced that small, crowded, and imperfectly ventilated bedrooms are a fruitful source of debility and disease.

How much sleep does nature require? The fact is that some persons need more than others. When we wake of our own accord, that is, without having been disturbed by anything, we have had enough sleep, and shall be better up. The Iron Duke used to say, "When it is time to turn over, it is time to turn out." How much sleep is required in our own case can easily be ascertained by going to bed every night at a certain hour for two or three weeks, noting the hour at which we wake every morning, adding the hours together, and dividing the sum total by the number of nights. The sleep obtained before midnight has been termed "beauty sleep," and the reasons why "early to bed and early to rise" should conduce to health, and so to beauty, are not far to seek; for sleep is sounder in the early night, when all is dark and quiet, sunlight most refreshing and invigorating, and the atmosphere created by all artificial lights (the electric excepted) extremely unwholesome.

There is an old saying that "every one knows his own stomach best," and therefore I think I shall not be acting unwisely in leaving the selection of food to individual taste and experience, simply stipulating that it be frequently varied, moderate in amount, well cooked, not too highly seasoned, and eaten slowly. Corpulence, so destructive to grace and elegance, arises from there being in the system a surplus of fat-forming material, with a deficiency of power, by a more complete process of oxygenation, to change it into products which can be carried off through the secretions, and consequently the best means of reduction and prevention will be to limit the supply of this material and increase the power by which its elimination is effected. The first object may be attained by extreme moderation in eating and drinking, being especially sparing in the use of, without entirely abstaining from, those articles of diet which particularly favour its production. The principal fat generators are—fat, butter, oil, sugar, arrowroot, sago, tapioca, rice, potatoes, carrots, turnips, parsnips, sea-kale, pastry, puddings, cocoa, ale, porter, sweet wines, and liqueurs. A good practical rule is to avoid butter at breakfast, bread at dinner, to eat fat sparingly, green vegetables in preference to potatoes, and to give up entirely sugar, pastry, ale, porter, and sweet wines. Plenty of exercise in the open air, by supplying the body well with oxygen and increasing the secretions, and keeping the body cool will fulfil the second object. Melted butter, hot buttered toast, pastry, and all dishes of which melted butter forms a constituent are considered, and I think with good reason, to have a prejudicial effect upon the stomach, and through it upon the complexion. Alcohol, if indulged in at all, must be taken in extreme moderation.*

Constipation is in many ways prejudicial to good looks, and, should partaking freely of the whole-meal

* "I am in accordance with high authority in fixing this at one ounce a day; as proof spirit contains only about 48 per cent. of alcohol and ordinary spirit is below proof, this may be roughly estimated at about two ounces, or an ordinary wineglassful; two glasses of good beer; half a pint of light wine, such as claret; a quarter of a pint of sherry, or rather less of port."—"Alcohol; its Nature and Action." By Philip Foster, M.D.

bread, fresh vegetables, and fruit fail to remedy it, purgatives, which only give temporary relief, must not be resorted to, but medical assistance obtained, with the object of having the intestinal tone restored. I am glad to see that the Adulteration Acts are being stringently enforced, for unless our food be pure and wholesome it is impossible that our health can be good. We can also do much to protect ourselves by favouring food which reaches us in its natural state, and by buying articles which have to pass through the manufacturers' hands only from noted makers, and such as give a sufficient guarantee of the genuineness of their productions.

Exercise should never be carried beyond fatigue, for when fatigue commences the beneficial effects of exercise cease, and it does positive injury. Persons who undergo severe mental strain should be careful about taking exercise after such strain. When the nervous system is fatigued, much physical exertion is improper—is, indeed, attended with grave risk, for the various parts of the system are so intimately associated, so dependent one upon another, that when any part is really exhausted, the others cannot be worked with safety, let alone benefit. Those who have passed their meridian should bear in mind that their days of reserve energy have also passed, and take life easily, avoiding, as much as possible, all strain and effort, whether mental or physical, as their vital powers can no longer be relied upon for meeting heavy and unusual demands.

I must not pass on without a strong recommendation of athletics, for only by a regular course of these exercises can every part of the body be thoroughly developed; but they must be approached gradually and not carried too far, lest injury be done to some vital part, such as the heart, by overstrain. Were girls thoroughly developed physically, the sad spectacle of women broken down and permanently invalided by the discharge of their natural duties would not be so common. Persons who lead inactive lives at home should carefully avoid any violent or prolonged exertion when away. A week or two spent quietly amidst pure air and changed scenes will recruit without overtaxing their strength, and such persons would do well to leave walking tours and mountain climbing to those whom habit and previous training have rendered equal to the strain. Much of the benefit derived from going away is due to the change and freedom from home worries, and as the body is greatly influenced by the mind, and pleasure one of the best tonics, preference should be given to places where our time can be agreeably passed.

Removal of a Leech from the Organ of Voice.—Professor de la Sota y Lastra reports in the *Revista Médica de Sevilla* (November) the case of a man, aged sixty-four, who was admitted into the hospital of Seville on Aug. 3, 1883. Five days previously, while working in the fields, and sweating, he drank some cold water, and a few hours afterwards spat some blood. Swallowing and breathing became difficult, and sleep was disturbed by attacks of suffocation. Swallowing a leech is not an infrequent occurrence amongst drinkers at Andalusian streams; but the rapidity with which blood trickles from the mouth and the feeling in the throat usually point to the cause of mischief. It was not suspected in the present case, as some hours had elapsed before any blood appeared, and the patient had a family history of consumption. After physical exploration of the chest, the Professor made an examination of the throat, which led to the detection of a leech within the organ of voice. Extraction of the worm with a pair of forceps gave immediate and complete relief.

Our Papers on Popular Science.

"Blessings on Science! When the Earth seemed old,
When Faith grew doting, and our reason cold,
'Twas she discovered that the world was young,
And taught a language to its lisping tongue."
—*Charles Mackay.*

OUR HEARING POWERS.

SECOND PAPER.

By E. H. Riches, LL.D., F.R.A.S.

As musical sounds proceed from uniform vibrations occurring at equal intervals, so a sound which is nothing but what we understand as *noise* is occasioned by *irregular impulses* communicated to the ear. Thus the musical sound is produced when the impulses and the undulations of the air are all exactly similar in intensity and duration, and recur after exactly equal intervals of time. Now, if the sound-impulses be quickly repeated, they do not strike the tympanum of the ear so as to produce separate sounds, but one continual uniform sound is the result, and this is called tone or pitch, the impulses being similar and at equal intervals. And it may be remembered that when the impulses are many in a given time the tone is called *sharp*, and when few the tone is called *grave*. The sharp tone is generally a loud sound, because the quick vibrations required to produce the sharp tone result from quick impulses.

The sensibility of the auditory nerves in different individuals varies, and it follows that the same sounds are not heard by every one with the same degree of intensity; the range, however, of human hearing includes about nine octaves. It has been ascertained in order that a sound may be perceived by the human ear, which is produced by a vibrating chord, there must not be less than thirty-two vibrations a second. It is stated, however, that when a chord gives eight single vibrations in a second, a sound that is perceptible is produced; at the same time it is interesting to remember that the human ear is capable of appreciating as many as twenty-four thousand vibrations in a second of time, and thus is able to hear a sound which lasts but the twenty-four thousandth part of a second, but, owing to the peculiar and wonderful construction of the human ear, it is not capable of hearing sounds which really occur in nature where a greater number of vibrations per second occurs. And may we not reflect here on the fact that, in our present state of existence, the ear, as also our other organs of sense, although evidently constructed with capabilities for greater things, are, as it were, in a state of abeyance, and this too for an all-wise and beneficent purpose? All the various functions of our physical and mental being, too, although capable of that action which would render us (what in our present phase of existence is an impossibility), a complete state of health, will undoubtedly in the wise dispensation of things at a time appointed by, and known only to, our Maker, be allowed their free course, when not only things which "eye hath not seen," and sounds which "ear hath not heard," but an existence which in its perfection is far beyond our present finite idea, is reserved for the human life. And if these capabilities

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exist within our frame, and as a perfect state of health was originally intended to be ours when man was first created, it is no waste of time surely to endeavour to comprehend, as far as our opportunities permit, at least those portions of natural and physical science which have mutual bearing upon a proper understanding of those laws which govern health. But to proceed. It has been observed that when one of several sonorous bodies near each other, tuned to one accord, is thrown into a state of vibration, all the others near it, capable of producing the same tone, will vibrate also; it is commonly observed, too, that a weak sound is generally drowned by a loud one, and the reason is this—when one body is made to produce a certain note, its soniferous vibrations will always be checked or interrupted by the emission of a more powerful or discordant sound near it. In the case of musical-stringed instruments very much depends upon the body of the instrument which supports the strings; we have instances, of course, of this in the case of valuable violins made by the famous old Italian makers, for be it observed that the vibrations produced by the strings of the instrument are communicated to the matter composing the body of the instrument and the surrounding air thus producing, as was before explained, an audible sound. Now, it is a fact worth noting that, of all animals, the bird alone always produces musical notes, and the reason may be explained thus: that it alone possesses *a vocal organisation*, in consequence of the larynx being in its case separated, as it were, into two parts, one placed at each extremity of the windpipe; while in other animals it is placed wholly at the upper end of the windpipe. The voices of birds, varying, as they do, according to their species, produce a sound of whistling or warbling, rather than of singing, for it is only the human voice which may be said properly to sing, as it is only man who has the power of uttering articulate sounds. And we may here mention that, in the human system the parts concerned in the production of speech are the windpipe, the larynx, and the glottis, and it is well that a somewhat clear idea of each of these parts be formed. The windpipe is simply a cartilaginous canal, through which the air issues from the lungs; the larynx is an enlarged continuation of the windpipe, formed, like it, of cartilage or gristle, membrane, and muscle. It is, however, more complicated, terminating above in two lateral membranes, which approach near each other, leaving an oblong, narrow opening, which is called the glottis. Now, the air expired from the lungs passes through the windpipe, and out at the larynx, through the opening of the membrane called the glottis, and it is the vibrations of these membranes caused by the passage of air which produces sound; and by varying the *tension* of these membranes and the size of the opening (which we are capable of doing) the sound issuing may be made acute or grave.

The force exerted by a healthy chest in blowing is about one pound on the inch of surface; or, in other words, the chest can condense its contained air with that force, and can, therefore, blow through a tube, the mouth of which is 10 feet under the surface of water. When we make an effort to lift a weight we *compress* our breath, that is, we shut up the air in our lungs in order that our body may have greater steadiness and firmness.

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

More about Kola Nut.—Messrs. Heyman & Phillips, of 15, Clifford-street, Bond-street, W., are grateful to the Editor of Health for his interesting article in the issue of January 11th. The Kola Nut on sale, 2s. 9d. a box, from them or from all chemists.—[Advt.]

It has been admitted that not only the healthiness of the lungs, but a general well-being of the system, may be largely regulated by a proper understanding of the mode of not only producing sound, but of articulating that sound with the lips, tongue, and teeth. A careless utterance, if persisted in, may in time sadly deteriorate the condition of those organs which in their union of function produce sound, and without doubt, where the tongue, lips, and mouth be properly managed with care in articulating sound, a general healthiness of tone is often an accompaniment, and even the saliva produced thereby in its proper quantity passes into the stomach, where it has its necessary uses. Saliva, too, has its use while in the mouth, by changing the starchy matters of the food into a chemical sugar, before passing into the stomach. In the case of *bread*, which contains starch, for instance, saliva is necessary to render it fit for digestion. But flesh food is capable of being swallowed without this previous admixture of saliva. We see this fact exemplified even in the case of a dog, which will swallow at once a piece of meat, but a piece of bread or biscuit it *can* only swallow *after* it has been duly prepared by saliva in the mouth, and is so rendered fit for reception by the digestive organs.

The Weather and the Public Health in 1883.—In view of the satisfactory condition of the public health in 1883, judged by the national death-rate, which so far as is at present known did not exceed the low rate of 19·5 per 1,000, it is interesting to consider one or two of the principal meteorological features of the year derived from daily observations at the Royal Observatory, Greenwich. The mean temperature of the year was 49·3°, against 48·9° and 49·7° in 1881 and 1882, and was 0·8° above the average mean in 100 years. Compared with the same mean standard February was exceptionally mild, and March as exceptionally bleak and cold. The mean temperature of August showed an excess. With these exceptions the monthly mean temperatures differed but slightly from the averages. The only marked effects produced by the temperature was a considerable temporary increase of mortality due to the cold March, which more than balanced the favourable effect of the mild February, and a sudden increase of infantile diarrhœa fatality, due to the excess of temperature in August. The temperature of each of the last four months of the year being slightly above the respective average, undoubtedly conduced to the low mortality of the last quarter of the year. Rain was measured at Greenwich, on 173 days in 1883, to the aggregate amount of 21·9 in., showing a deficiency of 3·4 in., compared with the average amount in sixty-one years. The deficiency of rainfall was most marked in March, August, and December; whereas the months showing the largest excess were February and September. The amount of bright sunshine recorded in the year was 1,241 hours, differing but slightly from the amount in each of the five preceding years, excepting only 1879, when the amount fell to 983 hours. The sunshine exceeded the average in August, but showed a marked deficiency in December. The weather in 1883 was, on the whole, fairly favourable to health, being free from severe frost in winter and from excessive summer heat. It is, however, mainly to other causes that we must look for an explanation of the low death-rate of the year.—*Lancet.*

Pure Water is such a vital necessity that, without it, illness is certain. None are more prone to the ill effects when impure than the young. To ensure a pure supply send a post-card to the London and General Water Purifying Company, Limited, 157, Strand, London, W.C., who will return particulars post free.—[Advt.]

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

HOW TO MAKE A POULTICE.

We cull the following remarks on an all-important family and medical topic from the *Practitioner* :—

At first sight the title of this paper may seem to many of our readers absurd, and the idea that medical men require any instruction in making a poultice preposterous, but we have been led to write it from seeing that many students and some practitioners do not distinguish between the proper methods of making a poultice for surgical and for medical use. Many, perhaps most, students spend a great part of their four years' curriculum in surgical study, and devote a comparatively small portion of it to medicine. This may partly be the reason why they do not learn the best ways of making poultices for the relief of internal pain; but another reason is, that in hospitals poultices are made in certain ways for the sake of cleanliness and economy, and these ways are not always the best possible for private patients, although they may be the best under the conditions which obtain in hospitals. Every one knows the relief which a poultice affords when the finger is inflamed, and has noticed how the painful throbbing diminishes after its application. Most people have noticed also that dipping the finger in cold water has a similar action, and it seems strange to many that the opposite conditions of heat and cold should have a similar effect. The reason probably is that both heat and cold lessen the force of the impulse with which the blood is driven through the dilated arteries of the inflamed parts against the block which exists in the capillaries (or smallest blood-vessels). Cold causes the afferent arteries (or those carrying blood to the body) to contract, and lessens the impact of the blood by diminishing the quantity sent to the inflamed part; a poultice lessens the impact by dilating the capillaries surrounding the seat of inflammation and affording a ready side outlet into the veins. In surgical cases we usually use the warmth and moisture of the poultice to act directly on the surface. We therefore make the poultice with crushed linseed or with linseed meal and oil, spread it on some tow and apply it to the skin without anything intervening. But useful though this method may be for wounds, ulcers, and abscesses, it is not the best form of application in cases of inflammation of the thoracic or abdominal organs, or where spasm is present without inflammation. In such cases we may, no doubt, do some good by applying the poultice to the surface exactly as in surgical diseases. We may draw off some of the blood to the surface; and we may also exercise a reflex action through the nerves upon the vessels of the inflamed organ below; but this will not be so great if we influence the surface only, as when we allow the heat to penetrate to the inflamed or irritated organs themselves. If we apply the poultice directly to the skin, it must be allowed to become tolerably cool before the patient can bear it, and thus half its advantage is lost. In order to relieve spasm, as in colic—intestinal, biliary, or renal; to relieve inflammation of the pleura (lining membrane of the chest), the lungs, the liver, or other organs, we want to apply the poultice as hot as possible, while we protect the skin from being scalded.

In order to do this, a flannel bag should be prepared, a convenient size being twelve inches by eight; this should be closed at three edges and open at the fourth; one side of it should be about one inch or one inch and a half longer than the other, and it is convenient also to have four tapes attached at the points which form the corners when the bag is closed, in order to keep the poultice in position. Besides this, another strip of flannel should be prepared of the same breadth as the length of the bag, and long enough to wrap round it once or oftener. Crushed linseed, bowl, and spoon should then be got together, and the spoon and bowl thoroughly heated by means of boiling water; the poultice should then be made with perfectly boiling water, and rather soft. As soon as it is ready, it should be poured into the bag, previously warmed by holding it before the fire; the flap which is formed by the longest side of the bag should now be turned down and fastened in its place by a few long stitches with a needle and thread; it should then be quickly wrapped in the strip of flannel (also previously warmed), and fastened *in situ*, if necessary, by means of the tapes. It may be covered outside with a sheet of cotton wool. In this way the poultice may be applied boiling hot to the skin without burning; the two layers of flannel which are at first dry allow the heat to pass very gradually indeed to the skin; as the moisture of the poultice soaks through them they become better conductors, and the heat passes more quickly, but the increase is so gradual as not to cause any painful sensations whatever, but only one of soothing and comfort. The poultice also naturally keeps much longer hot, and the necessity for changing it arises much less frequently.

The difference between the effect of a poultice made in the ordinary way and in the manner just described is sometimes exceedingly striking. It is, perhaps, less marked in cases of inflammation than in those of spasm. We have seen a patient suffering from intense abdominal pain at once relieved by a poultice made in the way just described, although a succession of poultices made in the ordinary way had been utterly useless. This way of making poultices is one of the minutiæ of medical practice; apparently extremely trivial, but really, we believe, very important. The relief which we have seen afforded by poultices made in this way, and the knowledge that *some* practitioners at least are ignorant of the method, must be our apology for drawing attention to such a trivial detail.

Peroxide of Hydrogen as a Bleacher.—"Oxygenated water," a common name for peroxide of hydrogen, has within the last few years attracted a good deal of attention as a bleaching and purifying agent, and has been successfully employed as a substitute for chlorine. It is this substance which is used in Dr. Carter Moffat's voice-culture experiments. It is now stated that Mr. P. Ebell, of Pfungstadt, near Darmstadt, has succeeded in preparing economically a product, pure, stable, and of constant strength, capable of being easily transported for long distances, and kept for years without losing its bleaching properties. Among other applications of this product, that of the decolouration of animal fibres is the most important, as it does not contain some of the disadvantages of other bleaching agents. For wool or silk, it is advisable, before bleaching, to cleanse the materials thoroughly, so as to eliminate all the greasy substances and impurities. For this purpose, Mr. Ebell recommends a bath in a solution of five parts carbonate of ammonia to one hundred of water, this bath being followed by a soaping, and thorough washing with water. The bleaching itself is performed either by immersing the materials in the solution of oxygenated water, and leaving them there at a temperature of from 20 deg. to 30 deg. C., until the decolouration is complete, or the materials are impregnated, when they are wrung out and exposed in a room heated to about 20 deg. C. They are then left to dry.

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

DRAIN AND CLOSET CONSTRUCTION AND HEALTH.

By B. H. Thwaites, F.C.S., A.M. Inst. C.E., &c.

SIXTH PAPER.—EARTH-CLOSETS.

In small towns, villages, and country residences, where the sewerage system and water-supply arrangements are such as not to permit the use of the more convenient water-closet, earth-closets may be used most advantageously. If properly constructed and attended to, they possess advantages particularly valuable in rural or agricultural districts; indeed, if the earth-closet system was more generally adopted, and the manure therefrom fully utilised, we should not require to ransack the most distant parts of the globe for guano, phosphates, alkalies, &c., for the fertilisation of our land.

In return for the value of the manure added to it by the human excretions, the dry earth acts as a deodoriser and disinfectant, destroying all obnoxious effluvia, and absorbing all noxious vapours. Moreover, the earth-closet cannot propagate infectious diseases, which may occur at a distant quarter from the place on which it is situated. The water-closet, if badly arranged, and if connected with imperfect sewerage arrangements, is liable to do this.

The earth-closet is not subject to the effects of frost, and is not liable to get out of order by improper substances being thrown into it.

In the earth-closet everything can be seen, and it requires no pipes and traps, which, if imperfect, may become the means of spreading disease and death.

The disadvantages of the earth-closet in comparison with the water-closet are the necessity of a constant and regular supply and removal of the earth. If these conditions are not stringently adhered to the earth-closets become both disgusting and dangerous to health. Moreover, the work of renewal and removal of the earth cannot be properly carried out without some supervision; it is liable to produce much dirt and inconvenience; it is a not very desirable addition to household labour, and as such will be evaded whenever possible.

If properly looked after, however, it should produce far less effluvia than a water-closet, and the value of the manure should almost pay for its removal. The average value set upon each person's excretions is 10s. a year; the value per ton of the manure from earth-closets is estimated, when dry, at from £2 to £3. The manurial value of this earth will be understood from the following.

To a quarter of an acre of sweet turnips there was applied one hundredweight of earth manure, which had passed five times through the closet. To three quarters of the same acre there was applied three hundredweight of superphosphate (at that time worth £7. 10s. per ton). The turnips grown on the one quarter of an acre, dressed with earth manure, weighed one-third more than those grown on either of the other quarters of an acre, dressed with superphosphate. The whole crop was fed off. No other manure was used, and the following year the barley crop was finer on the one quarter of an acre than on either of the other quarters of an acre, in proportion of four to three.

To insure the proper working of earth closets, arrangements should be made with some dealer of manurial agents or farmers, for the constant renewal and removal of the earth. The same earth can be used several times over, without producing any offensive smell. In fact, it has been used as many as twelve times, without proving in any way offensive.

The description of earth proved to be the most satisfactory as a deodorant and disinfectant is that of a loamy nature, perfectly dry, and finely sifted. Gritty earth or sand are useless, equally as absorbents, deodorants, or disinfectants. It is not necessary that the earth should be dried by means of artificial heat; the best plan is to have a sufficient quantity stored in summer to last for winter. When this is inconvenient, as in the instance of a small family, the earth can be dried on the hearth of the kitchen range, and afterwards sifted. A single person will require about 20 lb. of dried earth per week, or a family of six, one cwt. per week.

The earth as soon as removed from the closet, after having done service, should be laid under cover for a period of six weeks, and it may then be applied to the land as manure, or, if perfectly dry, be again used in the closet.

When it is found impossible to obtain earth in sufficient quantities, the sifted ashes resulting from an ordinary coal fire can be used in its place. One principle of applying the earth to the excrement is necessary for proper success of the earth closet system, viz., the earth should be applied in a small and definite quantity each time the closet is used, and not in a large quantity for several times use. The foremost pioneer of the earth-closet system is undoubtedly the Rev. Henry Moule; and the closets bearing his name may be found in almost every part of the globe.

Moule's earth-closets are generally arranged and constructed as follows:—The earth, or other deodorant, is contained in a specially-devised hopper, and is thrown on to the excreta in certain definite quantities, either by the action of a pull-up handle (similar to that of a water-closet), or automatically by the weight of the user on a balanced seat or footboard, or both combined. The Girdleston patent closet is an improvement on that of Mr. Moule's. In this instance, the closet is so arranged that its user observes nothing beneath the seat but an earthenware rim and a layer of dry earth. This latter resting on a valve fixed beneath the rim, effectually conceals the contents of the receptacle. On the handle in the seat being raised, the soil on the valve is upset into the receptacle; and, when the handle is returned to its normal position, a fresh charge of earth is spread over the valve in readiness for the next user of the closet, the valve at the same time preventing almost all upward draught.

Various attempts have been made to separate the solid from the liquid dejections, and amongst them is that of Dr. Bond. The receptacle in this closet is constructed so as to receive the liquids and solids in separate compartments. A box for the supply of the deodorising material (dry earth or sifted ashes) is attached to the lid of the seat. The user of the closet, in lifting this lid, simultaneously measures out a charge of the deodorant; on the user again closing the lid the deodorant is discharged on to the solid excreta.

In Moser's "Universal Closet," the deodorant (stored in a chamber at the back of the seat) is spread over the dejections in certain definite quantities, by the presence of air from a pair of bellows which are actuated by an ordinary pull-up handle. By means of a simple plate, or guard, fixed across the receptacle; fluid is diverted into an independent vessel containing some absorbent material.

Somewhat similar to Moule's closet is that of Gibson, which consists of a movable shoot attached to a hopper and arranged to receive a small quantity of deodorant, which is distributed on to the dejections by means of a shovel action arrangement.

A stand-pipe with a funnel-mouth receives the fluid excretion, and conveys it direct to the drain without mingling it

with the solid dejections. In some of the manufacturing districts of the West Riding of Yorkshire the division of the liquid from the solid discharges is an important quality, as the former is used in some of the manufacturing processes; but when the manure from the earth-closet is used merely for agricultural purposes, it is of very little importance whether the solid and liquid dejections are separated or not. Of course, this separation will reduce the quantity of earth required for the closet by at least 30 per cent. It will be seen by the reader that the development of the earth-closet system has received the assistance of numerous ingenious inventors; but the remarks applied in reference to the water-closet mechanical arrangements are equally applicable to the earth-closet—*ergo*, the simpler and stronger their construction is the better. Where the authorities institute and provide a staff of workmen to regularly supply and remove the earth from the closets, the earth-closet system (in view of the great manurial value of the refuse earth) is the *ne plus ultra* system for agricultural towns and districts.

Deficient Air-Space in Work-Rooms.—Judging from recent proceedings taken under the Factories Acts, there would seem to be reason to fear that manufacturers employing a larger number of workpeople than they have space to accommodate, crowd their rooms in a fashion regardless of health, and are let off easily on promise of amendment when actually charged before a magistrate for the statutable offence. This is much to be regretted, because it ought to be assumed that the law which requires a specified amount of air-space for each person confined in a work-room has been enacted in the interests of public health. It is lamentable when individual members of the community show unwillingness to do or suffer anything for the general good. In this matter affecting the health of work-people in factories and work-rooms, it is especially necessary that there should be a cordial endeavour on the part of employers generally to treat the Act of Parliament and the regulations that have been issued under its authority as a code of directions for health preservation, and instead of evading the law to obey it in the spirit as well as in the letter. A little more loyalty to the commonwealth would be a gracious proof of patriotism and good fellowship on the part of some of our respected fellow-subjects.—*Lancet.*

Man's Place in Nature.—One hears now and then the assertion that man is not the highest animal. In proof of this assertion, it is urged that this animal is far more specialised in one direction, and that animal in another. Mr. Lockington takes the ground that specialisation is not in itself any proof of advance. Now, the real progress is not to be sought in the specialised offshoots of any series, but in the growing stem from which it is parted. The highest specialisation is that based upon perfection of the greatest number of parts, not upon the great development of one part at the expense of others. "We need not ask morphologists or embryologists whether man is the highest animal; we have the proof of it every hour before our eyes. His powers of mind are the resultant of his structure, and have enabled him to conquer all other beings in the struggle of life. That animal is highest which possesses the widest range of faculties. This man undoubtedly does. No other animal has the power, by voice or pen, to exaggerate or depreciate its own importance; no other animal can use the powers of nature as he; no other can produce works which are proportionately comparable to his; and if, therefore, morphology or embryology contradict the facts of life, then are those sciences unsafe guides, as they certainly are only partial ones."

Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

THE TRUTH ABOUT EXERCISE.

It should be understood by the public, as it is known to the profession, that the aim of exercise is not solely to *work* the organism which is thrown into activity, though that is one, and a very important, part of the object in view, because as the living body works it feeds, and as it feeds it is replenished; but there is another purpose in exercise, and that is to call into action and stimulate the *faculty of recuperation.* Those who believe in the existence of a special system, or series, of trophic nerves, will not object to this designation of the recuperative function as a separate "faculty," and those who believe nutrition to be effected in and by the ordinary innervation will recognise the sense in which we employ the term in italics. It is through defect or deficiency in the vigour of this faculty, unaccustomed feats of strength, whether of mind or muscle, are found to be exhausting. The task is performed, but the underlying faculty of restorative energy, or power of recuperative nutrition, located in the particular part exceptionally exercised, is not in a condition to respond to the unusual call made upon it. When a man goes into training, or, which is practically the same thing, when he habituates himself to the performance of a special class of work he so develops this recuperative power or function that the repair or replenishing necessary to restore the integrity, and replace the strength of the tissue "used up" in the exercise, is instantly performed. The difference between being accustomed to exercise and able to work "without feeling it," and being barely able to accomplish a special task, and having it "taken out" of one by the exploit, whether mental or physical, is the difference between possessing the power of rapid repair by nutrition, and not having that power in working order—so that some time must elapse before recovery takes place, and during the interval there will be "fatigue" and more or less exhaustion. The practical value of a recognition of this commonplace fact in physiology will be found in the guidance it affords as to the best and most direct way of developing the power or faculty of recuperation by exercise. Many persons make the mistake of doing too much. Exercise with a view to recuperation should never so much exceed the capacity of the recuperative faculty as to prostrate the nervous energy. The work done ought not to produce any great sense of fatigue. If "exhaustion" be experienced, the exercise has been excessive in amount. The best plan to pursue is to begin with a very moderate amount of work, continued during a brief period, and to make the length of the interval between the cessation of exercise and the recovery of a feeling of "freshness" the guide as to the increase of exercise. We do not mean that false sense of revival which is sometimes derived from the recourse to stimulants, but genuine recovery after a brief period of rest and the use of plain, nutritious food. If this very simple rule were carried into practice by those who desire "to grow strong," there would be less disappointment, and a generally better result, than often attends the endeavour to profit by exercise unintelligently employed.—*Lancet.*

Snelgrove's Governor Gas Burners.—Save quarter to half the gas bill. 15s. per dozen. Samples 18 stamps. Lists free.—60, Queen Victoria-street, E.C.; and of all Ironmongers.—[Advt.]

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

HOW A DOG PLANNED AND EXECUTED WITH REFERENCE TO THE FUTURE.

Mr. King, of River Falls, Wisconsin, writes in *Science* as follows:—Six weeks ago, Prof. J. B. Thayer, of this place, returned from Ree Heights, Dakota, bringing with him one of a litter of eight pups raised by a slut of the setter breed. The story which he relates to me of this pup's mother is, it appears to me, worthy of the record.

The good mother appears to have discharged her arduous duties as only a mother can, and arrived with her eight babes at a time when they should be weaned. At this juncture, judging from the events reported to have followed, she seems to have conceived the idea that too many dogs were occupying the same claim, and that a distribution was desirable. Accordingly, she started one morning with three of her pups, and was observed by Miss Rosa Cheney, now of this place, running in the road toward their claim at a rate which made it impossible for the pups to keep pace with her. The dwelling where she lived, and another shanty on the adjoining corner of another claim, are situated one mile and three-fourths from the dog's home. The mother reached the claims in advance of her babes, but no sooner had they arrived than she hurried on at her best pace. Miss Cheney reports that "the puppies came up all out of breath, and apparently too tired to continue; but the smallest of the three followed on." Another claim was reached three-fourths of a mile beyond; and here Miss Cheney observed the mother stop until her panting babe came up, when she immediately set off again. A quarter of a mile beyond the last claim, the mother was observed to make a third halt as before, and then to pass on beyond the range of vision, towards Ree Heights, with the puppy still following her. Two days later the persistent mother, with her more persistent babe, was observed coming back; and Miss Cheney tells me that the little puppy appeared almost dead from fatigue.

Some days later the dog led off two more of her pups, and succeeded in leaving them both; but in the mean time the two puppies left the first day were returned. A pup was also left at Professor Thayer's claim, but was returned, and exchanged for another. Both Professor Thayer and Miss Cheney assure me that other efforts of the same kind were made by this dog, but with what results they are unable to say.

After the puppies had been distributed, they were not forgotten; for the old dog used often to go and play with them. Professor Thayer mentions one instance of her coming and playing with the puppy left at his claim until it was very tired, when she lay down by the side of it; but, after it had gone to sleep, she quietly walked to the opposite side of the house, and then hurried away in the opposite direction from home for a distance of about forty rods, when she turned and went directly there, thus showing quite clearly that the thought of distributing her puppies was still uppermost in her mind.

What events may have awakened this desire on the part of the mother, or what reasons she had for her acts, we do not know; but in her own mind I have no doubt the case was urgent and the way clear, if not also just. It would appear not only that this dog must have thought her plan through, but that she must also have held it definitely in mind for several days while she executed it, thus indicating quite unequivocally, it seems to me, that one animal at least, ranked lower than man, possesses the power of looking into the future and of executing plans deliberately laid with reference thereto; "man is the only animal which has the power of looking into the future," to the contrary notwithstanding.

Our Letter: Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "The Publisher," *at the same address.*

Contributors are requested to send stamps for the return of the MSS. *in event of non-acceptance. Every care will be taken to ensure the safety of* MSS., *but the* Editor *and* Publishers *cannot hold themselves responsible for accidental loss.*

Correspondents are requested to write on one side of the paper only The Editor *disclaims responsibility for the opinions expressed by Correspondents.*

LETTERS TO THE EDITOR.

WHOLESALE ADULTERATION.

Sir,—In England we frequently complain, and generally with good reason, of the systematic deterioration of our food, and the dangerous commixture of poisons with our textures, &c. Still we at home have a certain chastened satisfaction in knowing that in some civilised countries matters in this respect present a much worse aspect than with ourselves. The British Isles are to the American official mind a very paradise of honest tradesmen—a country where grocers, bakers, brewers, &c., never sell their customers anything than that which they set forth to sell. It was not so once, our transatlantic neighbours will tell you, in which assertion they are right, inasmuch as it is no *great* length of time since that a raid upon shopkeepers' goods on this side of the water, and out of sixteen thousand samples of goods of various kinds that came under test, three thousand of those sixteen thousand were found to be so much adulterated as to secure the conviction of the vendors. In spite of this, there are still to be found in the United Kingdom cases of ladies being poisoned by burning arsenical candles in their bedrooms; of single packs of playing-cards containing a fifth of an ounce of arsenic apiece; of coffee made of mahogany sawdust and baked liver; of upwards of fifty persons being poisoned in one year by wall-papers; of tinned fish heavily contaminated with lead. Yet, in spite of these trivial blemishes, and about a thousand others equally abominable and not the less dangerous to human life, the Americans look upon Great Britain as a land in which people may eat, drink, and clothe themselves without the slightest fear of unlooked-for results. This being the case, and reports have for some time past stated it to be so, what may we conclude as to the character of the American manufactured product, and the degree of peril which is involved in an existence in the United States?

Nothing indeed, if we may judge from some published reports, dating only a year or so back, would appear impossible at the American store. Not only is every adulteration known to the comparatively unsophisticated British tradesman in vigorous employment, but improvements upon them all, deadly when poisonous, and unwholesome when not, are frequently practised. Children meet with an untimely death through wearing coloured stockings, and women die from the cosmetics they use. The vinegar is poisoned with sugar of lead, the pickles with verdigris, the sugar with chloride of tin, syrups with calcium, hams with glucose, and almost everything with something. A large New York house were advertising a short time ago three grades of cream of tartar, and a Boston chemist, who *maliciously* analysed a sample of the first quality, found it to contain 50 per cent. of terra alba. What would have been found in the worst it is difficult to say; but instead of analysing cream of tartar for white earth, it would probably have been more to the purpose to analyse the white earth for cream of tartar.

Baking powders are invariably manufactured with alum, and the receipt for pickling fluid is dilated sulphuric acid, with alum and white vitriol or verdigris added to taste. This, however, would only answer for green-coloured pickles, and if the yellow be preferred, sugar of lead and chromium take the place of blue vitriol or verdigris. One great firm for pickles buys its sub-acetate of lead five gallons at a time, and its verdigris by weight. These pickles are sold in New York, and the people who eat them are said to eventually die of poisoning. Tobacco, again, is tampered with in ways that "would not only disgust, but terrify" consumers, and as a sample of what may happen, we are told of cigarettes charged with opium and rolled in arsenical paper, the result being that young men go to the

hospitals for the removal of cancers on the lips. In confectionery and sweetmeats there is, of course, a practically unlimited field for the use of colouring poisons; but, assuredly, the very infamy of crime is reached when a shopkeeper deliberately hands over the counter to a child, a lump of terra alba, sweetened with grape sugar, and made gay with arsenical paint. If anything can be worse than this it is for the druggist to dilute his medicines so that the patient, receiving his doses far below their strength, dies. Yet both of these practices were gibbetted in a report not long ago from America. Spices afford, of course, a fertile field for ingenuity in artificial flavours, and to attain them the chemical shopkeeper does not scruple to use the most formidable poisons. Mustard and pepper are subjected to commixtures that are either horrible, or grotesque, or dangerous; while the method of adulterating preserves, jams, and jellies, are revolting even when not actually perilous In these, and other adulterations, arsenic plays a very important part; but when it is considered that the annual importation amounts to over two million pounds, and that one can buy for a cent enough to kill two thousand eight hundred people, the terrible list of annual deaths from this cause is astonishingly small. By far the greater portion of that which is imported is used in manufactures in which its presence is not known, or, as is frequently the case, even suspected by the purchaser. For instance, there are cases of cloth containing eight grains to each square foot, and others of artificial flowers containing ten grains, and of children dying through veils that are thrown over them in their crib whilst asleep to act as a protection from the sun and flies; then we find cases of children dying through sucking toys, buttons, and wearing coloured stockings; whilst grown-up persons suffer terribly, and even for life, by the poison of tinted underclothing, or blue veils, or gloves, and coloured hat-linings. The accumulation of such facts as these—and they would fill volumes—presents this industry of manslaughter in very dreadful proportions. The foregoing is no fanciful picture; on the contrary, it is list of facts—facts unadorned—coming from the fountain-head—America itself.—I am, yours, &c.,

Thomas Pearson.

DISINFECTION BY BOILING.

Sir,—The meritorious aim of Health is to disseminate sound hygienic principles. The first rule, then, must be that nothing is taken for granted which has not been proved. I see amongst the "Notes" in to-day's number, the following:—"When either (water or milk) is suspected of being impure, rigid attention to perfect boiling of the liquid in question will be found an effectual preventive of any diseased action."

I am, of course, aware that in many instances, persons who had partaken of boiled beverages, escaped infection by milk or water, to which they evidently had been exposed. Boiling appears thus a considerable safeguard against disease; but I believe it would be important if you were clearly to express your views whether or not you look upon it as an *absolute* safeguard. Allow me here to refer to a lecture by Professor Tyndall at the Royal Institution, June 8, 1877. He is reported to have stated that, "during his investigations, which occupied him for six months in 1875-76, he had found it to be a rule without exception, that various infusions, which had been boiled for five minutes, would not putrefy in an atmosphere in which all germs had been allowed to subside. But in the autumn of 1876 he found that infusions, apparently the same as those prepared in the previous year, were not sterilized by boiling for fifteen minutes." He thus concluded, and proved by experiment, that in the latter infusions, "a more obstinate contagion was present, which the former had escaped."

This observation, I believe, led to the method of disinfection by *discontinuous* heating, which is now generally used when liquids have to be sterilized. Thus, Dr. Koch, of Berlin, sterilizes his nutritive gelatine by boiling in a water bath on three consecutive days for fifteen minutes each. I am not aware of any direct proof that the actual germs of disease are more readily destroyed by boiling than the bacteria of putrefaction.—I remain, &c.,

London, *January* 18, 1884. Gustav Bischof.

[We agree in the main with Mr. Bischof's remarks; but he knows that the death-point (by boiling) of germs not only varies greatly, but may be said to be practically undetermined. Further, we know practically nothing, as yet, of the germs of typhoid, cholera, &c.; and, so far, the evidence, *re* boiling, on Mr. Bischof's own showing, is negative. But this much seems clear, namely, that the risks of infection are at least greatly lessened by fluids like milk and water being boiled—we do not say such risks are avoided or made obsolete. No one doubts that effective boiling must produce at least a suspension of activity of germ life—that in many cases it must actually kill many organisms, is a highly feasible supposition. And if it be added that healthy digestive processes in their turn will probably exert a destructive action on germs at large (and more especially on germs or organisms rendered temporarily inert by boiling), the justification of our advice to boil water and milk is easily found. Boiling, in our opinion, is infinitely preferable to filtration as ordinarily practised. No process of filtration, short of one involving destructive "disinfection," can affect the microscopic "germs" of disease. And that heat is, after all, our best safeguard, is proved by the preference of sanitarians for disinfection by means of steam and hot air.—Ed. "H."]

A HOUSEHOLDER'S GRIEVANCE.

Sir,—The following plain statement of facts may, perhaps, be of use to some of your readers, and may serve as a warning to those who think that they have done everything to make their houses perfectly safe in a sanitary point of view.

Eighteen months ago I purchased a house for my own residence, in a healthy suburb of the North-west of London. The house in question had been constructed by the best builder in the place, by whom, and by whose foreman, I was *repeatedly and explicitly assured* that it, and all the other houses on the estate, were well and specially drained in a given direction; that the sewage was partly purified, and finally ran into a tributary of the Thames, which drained the valley. Moreover, I was told that in this particular the houses of that estate differed from all the other houses near, which only had cesspools. Before I decided on the purchase, the medical officer of health for the district recommended the house to me as the best-situated and best-built in the place, and two independent architects and surveyors employed by me (one of them a professed sanitary officer) reported most favourably of the house after inspecting it, simply recommending some trivial alterations, which I made.

Before I had been living many months in the place I was frequently troubled by stoppages in the drains, and each time that this was rectified by the builder the same account was given to me about the local estate drainage. At last these stoppages became so frequent that I had the ground opened up, and then found, to my utter amasement, that, notwithstanding all that I had been so repeatedly told as to the drainage system on the estate, my house-drains led—nowhere! not even into a proper cesspool at a good distance from the house; but that they came to an end at a distance of less than ten yards from the dining-room window, where, of course, there was an accumulation of filth. Moreover, the drain from the servants' closet actually ended close under the dining-room window. All this not only accounted for the trouble we had had, but gave a very sufficient reason for the persistently wet condition of a patch of ground close outside my premises, which in time is to form part of a new side road.

I have now had 6 in.-pipe drains properly laid to carry the sewage to some distance from the house. Have I any legal remedy for this gross misrepresentation against the builder from whom I purchased the house, or is it only another case of *caveat emptor?* Perhaps you, or some of your legal correspondents, can inform yours truly, One of Your Contributors.

QUERIES AND ANSWERS.

We would direct the attention of our correspondents to the fact that, owing to the necessity for sending Health to press early in the week, answers to queries cannot, as a rule, appear in the succeeding number of the journal. Every effort is made to secure punctuality in the replies, but we must ask the occasional indulgence of our readers, owing to the large amount of correspondence, which requires assortment and reply.

We must also request correspondents who write enclosing stamps for copies of Health, to address their inquiries to the Publisher, *and not to the Editor.*

Correspondents will please note that Queries addressed on Postcards are consigned to our waste-paper basket. If information is worth having, it is at least worth a letter.

GENERAL.

J. Aitken.—Thanks for your letter, which has received attention in Health No. 42.

Bessie.—Probably not; at least not in the experience of physicians generally.

Alered C.—1. Try the first-named. 2. A *villus* is a minute projection of the wall of the intestine, through which the chyle, or digested food-products, pass on their way to the blood.

Andrew Carter.—No relationship whatever.

James.—"Calculus" is a term for "stone," such as forms in kidney disease. "Biliary calculi" are gall-stones, which form in the gall-bladder, and pass down the duct into the intestine.

Ontario.—Yes; suitable for your case.

B.A.—1. The University of St. Andrews grants the M.D. degree (by examination) to qualified practitioners of a given age. No residence required or attendance on classes. See the University "Calendar." 2. Yes; L.R.C.P. and L.R.C.S.E. of the Edinburgh Colleges are thoroughly good qualifications; but, after all, it is the man that makes (and honours) the degree and qualification—not the degree that makes the man.

Oxonian.—To call the ways and works of Mr. Irving Bishop or Mr. Stuart Cumberland "thought-reading" is a piece of quackery. We are quite open to allow any thought-reader who will pay us a visit to attempt to read the number of a five pound note known to us and lying in our purse, which, in turn, lies in our pocket, and to award him the note if he is successful. In such a case we will think strenuously of the number, and allow any amount of brow-pressing or other needful manipulations of our cranium; but we shall not, under any circumstances, allow the note to pass from our pocket. If "thought-readers" can perform what the term in question shows they pretend to, we are open to experiment at any convenient time and place.

Ernest C.—1. Illegal, decidedly. 2. Dangerous to attempt it.

Bathwick.—There are two organs of voice in birds; one at the upper part of the windpipe, and one below where the windpipe branches.

C. A.—1. We have never heard of the firm you name. 2. The pamphlet is a quack production.

B. L.—We fail entirely to see wherein we have been discourteous to you. You sent us a letter stating saliva was a cure (in your opinion) for warts. We commented thereon, giving your opinion, and adding ours—the latter right you surely can't deny to us. We also added that we believe yours is a "faith cure." There is nothing discourteous in this—unless to differ from you constitutes the head and front of our offence. As for the somewhat unfair (and on your part discourteous) innuendo, that doctors won't adopt your remedy because it isn't a "paying" one, we may say that as we are not aware any doctor makes a fortune by curing warts, your hint falls somewhat flat. As a doctor's widow you should be more generous to a noble profession—and to the Editor of Health. You will be able to judge more fairly of us when you see the prominence we have given (in No. 42) to your topic.

A. Wardrop.—Very sorry we can't assist you. We know nothing about class or other arrangements of the matter you inquire about.

SANITARY.

Inspector.—The mean annual death-rate of England and Wales is given as follows:—1841-51, 22·33; 1851-61, 22·25; 1861-71, 22·50; 1871-81, 21·27.

Inquirer.—"Cooper's Salts" consist of a compound of chloride of sodium, lime, and magnesium.

C. D.—Blowing off steam into sewers is condemned by sanitary authorities; and no hot water should be allowed to run into them, as such treatment is believed to hasten putrefactive decay.

G. J. N.—Cases of poisoning by lead after drinking cider have been caused by that fluid taking up the lead which coats the cider-troughs.

Health-seeker.—1. No reformer could for a moment prefer an intermittent to a continuous water-supply. About 25 gallons per head per day is a fair estimate—exclusive of municipal and trade purposes. 2. See recent "Notes by the Way," and Mr. Buchan's letter in a recent number regarding typhoid fever infection from open drains.

F. W. C.—The material is more thoroughly permeated by the leavening influences; no yeast may be used: and by many the aërated is regarded as being more digestible. As regards nourishing properties, those depend on the flour, &c., and not so much on the manufacture.

MEDICAL.

Saxon.—See and follow advice given to "A Poor Man" in Health No. 37 (page 190.) Try the effect of taking a little "Æsculap" water occasionally in the morning as a mild aperient. A vegetable diet might be the renewing of your health. Glad to assist further, if not relieved as above.

Glenisla.—You should know that what you name is, in your case, a sign of health, and in no way a disease. You are quite well. You must not, however, take the tonic continuously, but leave it off, and trust simply to careful living, cold baths, and out-door exercise.

C. R.—You should, in the first place, rest after food; and avoid all exertion of a *sudden* character, and such as is apt to strain you. See well to your digestion, and take a mild aperient occasionally. If the symptoms continue, you should have your chest thoroughly examined by an Edinburgh physician. We shall be glad (if desired) to send you the address of a reliable authority, on receipt of stamped addressed envelope. Yours is a case in which, for the relief of your mind, you should have a good opinion.

G. P. P.—What you complain of may arise from a number of causes. You should undergo an examination by a good surgeon. In such a case the cause is only to be detected by the personal examination of a patient.

Padd.—We have often had to consider the question you put to us, and which, we admit, is an all-important one. The following are the rules for safety:—Never to tricycle (1) if aware of the existence of any displacement or if ailing; (2) if the exercise is attended afterwards by back pains and fatigue; (3) if any functional irregularity (as is indicated in your case) becomes frequent; (4) and never just before (or after) such functional events occur. Above all, be moderate in the exercise. Glad to answer more fully, if required.

A City Clerk.—Attend to the following rules:—1. Sleep on a hard mattress. 2. Sponge with cold water each morning. 3. Avoid taking fluids before going to bed. 4. Take open-air exercise to a moderate extent. 5. Avoid stimulants and highly-spiced food. 6. Take (for a time) a teaspoonful of Fellows' "Syrup of the Hypophosphites," in a wine-glassful of water, thrice daily before meals.

J. N. B.—See and follow advice given to "A City Clerk" above. You should attend specially to cleanliness, washing with tepid water and soap, and removing all offensive matter. Yours is a case in which also more fresh air and exercise are demanded. Study less and walk more.

One Afflicted.—Try the effect of hot salt baths twice or thrice a week at bedtime. Food to be plain, but nourishing. (Read our "Answers to Correspondents" and you will see the impossibility of your letter, dated January 15, being replied to in our issue of January 18. You don't allow for printing and publishing, evidently.)

Jennie.—Look to your digestion; take "Æsculap" or "Friedrichshall" water in the morning as a mild aperient; avoid suppers, and study (and follow) advice given to "H. C. E.," in Health, No. 40 (p. 238).

Jas. Thomson.—We regard your case as one in which your nervous system is somewhat affected, possibly by what happened abroad, and also by your worrying yourself over-anxiously about your health. We agree that your diet (which should be plain and not stimulating) must be regulated carefully if you are to regain health. Our advice is that you should take a prolonged rest, away from home, and have change of air and scene. Take a little "Pepsine" with your food to strengthen your digestive action, and a little mineral water (such as "Æsculap") taken occasionally in the mornings will serve as a mild aperient. Yours is not, in our opinion, a case for drugs. We shall be glad to be of any further service to you.

Gautier.—In such a case as that you describe the symptons may proceed from a variety of causes. Our best advice to you is to procure a thorough medical examination by a consulting physician. The symptoms appear to us to point to some asthmatic affection, and such an affection is often accompanied by heart-symptoms. The physician you name at Leeds is in every way a trustworthy authority. We should certainly advise her to refrain from all violent exertion until she has had a medical opinion.

Wandsworth.—We advise you not to tamper with salicylic acid, and not to take that drug save under medical observation. It is a drug which in its administration requires careful watching, and there may exist in your case conditions or symptoms which contra-indicate its use.

J. Watts.—You should know that your affection is often very obstinate in its nature. Try injections of Condy's Fluid (1 to 10 or 15 of water) thrice daily; take 15 drops *Fer Bravais* thrice daily in water; rest as much as possible; see to your general health; and try a change of air—visit the seaside if possible. Write again if not cured.

A. W. G.—Thanks for cutting.

T. W. H.—See advice to "A City Clerk," in present number of Health, and, above all, don't grow morbid. You should know that what you complain of, unless excessive, is perfectly natural in healthy persons. If not better, write again.

J. W. Reid.—Try the effect of the following:—Carbonate of ammonia, one drachm; bicarbonate of potass, one-and-a-half drachms; infusion of chiretta, six ounces. A tablespoonful thrice daily before food. Avoid tea and coffee for a time, and avoid constipation. Write again in a few days after trial of above.

Dark Gipsy.—Yes; there is no doubt that such milk is quite as nutritious as ordinary milk. The brand you name is a good one. Analysis proves that the milk-constituents are present in the milks you inquire about as in ordinary milk—provided the former are not overloaded with sugar, &c.

Hopeful.—What is it you complain of? You are a perfectly

healthy person, needlessly alarmed at what is a perfectly natural occurrence in most healthy persons. Don't grow morbid or be so foolish as to think you are ill.

J. Black.—You do not give a very clear account of your case; but it is tolerably certain that your case is one simply for frequent washing and strict cleanliness. Apply a little pure Vaseline to the parts.

J. E. W. E.—See advice to "T. W. H." and "Hopeful," in present number. If that does not apply, follow advice to "A City-Clerk," in present number; and, above all, don't be uneasy, and steer clear of quacks.

A Constant Reader (will please use some more distinctive name) should take "Æsculap" or "Friedrichshall" mineral water occasionally, in the mornings, as a mild aperient; and the following lotion might be tried as a preliminary measure:—Oxide of zinc, four drachms; glycerine, one drachm; lime water, two drachms; rose water, six ounces. Apply as a lotion to the parts affected. Report progress thereafter.

J. B.—Attend to cleanliness; and follow advice to "J. Black" in present number of Health.

Ivory Jack.—Consult a dentist; but in your case we think it would be as well for you not to meddle with the teeth. Such deformities are often impossible of cure.

Postman Bill.—See advice to "T. W. H." and "Hopeful," and also to "A City-Clerk," in present No. of Health.

Dyspeptic.—All in good time; but the last topic you name is hardly suitable for the pages of any but a medical journal.

G. S.—To prove that you are in a morbid state of mind is easy from your letter, in which you mention your belief in the nature of what "passes away"—a belief utterly erroneous. If you think of this as you do, there is little wonder you are morbidly sensitive. All we can say to you is once again, improve your general health; go for a complete change; take a sea-voyage—anything to brace you up, and to put you into a more cheerful frame of mind. Your letter is a plain evidence of your mental state. You have but "one idea"—that you are dreadfully ill—and with this fixed idea, all advice (and drugs) are useless. We have given you our best advice as above. Consult a good medical man in London if you will, and see if he does not confirm our views.

M. M.—We should suggest your trying the effect of giving the child cod-liver oil (or the emulsion), to which some syrup of the iodide of iron has been added by your druggist. Give him this regularly for a time, and let him also take plenty of milk and cream. Fresh air will do him good. See that his bed-room is well ventilated. What you name is not itself a disease—only a symptom of a little weakness that wants correction by such treatment as above ordered. Smear the eyelids with Vaseline at night. Glad to be of further service.

Scrutator.—No; cold sponging should be taken in the morning only. Persevere in the treatment ordered; and take plenty of fresh air and exercise.

Trachea.—You should seriously consider the advisability of trying cold sponging to the chest each morning, and brisk friction thereafter. See that there is sufficient reaction, however. Take a dessertspoonful of cod-liver oil thrice daily, after food; let your diet be light, but nourishing; and when the cough is troublesome, try the following:—Carbonate of ammonia, one drachm; tincture of squills, three drachms; compound tincture of camphor, half an ounce; infusion of senega to make up six ounces. A tablespoonful every four hours.

H. Bord.—Try the effect of taking a mild aperient (such as "Æsculap" Water) in the mornings, occasionally. Attend strictly to your general health; and apply carbolated Vaseline to the parts. If not improved, write again, describing your health more fully.

Hogarth.—1. Try the tonic (for a time) recommended to "A City-Clerk," in present number of Health, instead of the steel. 2. Don't irritate the parts further at present. 3. Before taking the step you name consult a surgeon. We can send you (if desired) the name of a reliable authority on receipt of a stamped addressed envelope. In such a case a personal examination alone can safely determine the exact state of matters.

Consumption.—No need for alarm so long as you attend strictly to your general health in the way of food, clothing, ventilation, &c. You should follow that part of the advice given to "Trachea" (in present number of Health) relative to cod-liver oil; but yours is a case simply for the careful watching of your general health.

G. Herbert.—Read and follow advice given to "A City-Clerk," in present number of Health. Our remarks to "T. W. H." and "Hopeful" (also in present number) should also be perused by you. You have run the gauntlet of quacks, and have (as usual) had all your symptoms exaggerated. If not bettered by following advice above indicated, write again.

Layman.—The herb you name has simply astringent qualities, similar to those possessed, for example, by weak tea. That it (or any other drug) can remove dimness of sight is an utter impossibility. As we told you before, yours is a case for the saving of your sight by a judicious selection of glasses. Lotions can do you no good, as you will find after trial.

Ted Garth.—The operation might have been of service if it had been performed in time, only it was surely some other disease than that you name for which it was proposed. Are you certain it was not croup or diphtheria? In a bad case of the disease you name, the patient dies of suffocation, and there is high inflammation of the organ of voice and neighbouring parts.

Short.—Growth *may* take place after the age you mention. No special means exist, however, save attention to diet, nourishing food, out-door exercise, and wisely-ordered gymnastics.

Petit Garçon.—Nourishing food, cod-liver oil (or the emulsion) taken through the winter; plenty of milk and cream; and out-door exercise to stimulate nutrition. See the recent papers in Health on "How to Get Thin or Fat."

L. A. M.—Live carefully; avoid chills above all; and avoidance of constipation. As a lotion, try the effect of bathing the part with a little tepid water in which bicarbonate of soda has been dissolved.

Repentant.—Steer clear of *all* advertising doctors, if you are wise. Read and follow advice given in present number of Health to "A City-Clerk."

N. S. S.—Doubtless a "wandering" mind might be made to concentrate its activities by a strong mental effort; but our advice to you is to see well to your general health as a first measure. A change of air is often an efficient mental restorative.

R. H. D.—Your ailment is not uncommon, and is sometimes obstinate in its nature. You might try the following lotion: Dilute hydrocyanic acid, 2 drachms; bicarbonate of soda, 1 drachm; glycerine, 6 drachms; rose-water up to 6 oz. Label: "For external use only. The lotion." Write again if not bettered.

Salvo.—Your letter interests us. What you name is by no means an uncommon occurrence, and is due simply to extreme nervousness. Probably by the time you read these lines you will have found that all has come right, and that you have overcome your fears. Be careful of your health; don't be over-anxious or over-hurried in your movements, and use cold-water sponging each morning. Let us hear if our prognostications are correct.

Alchemist.—We fancy the liquor of the citrate of magnesia (which consists of the citrates of magnesia and potash, with syrup of lemons) would suit you.

F. W. D.—1. The bill is a quack production. 2. Yes; both are fattening, if taken with milk especially. 3. No; such topics are not suited for our journal. 4. No, not too frequent if only once a week or so.

Dow.—We fancy you would improve on a vegetable dietary. Give this a trial, and what you complain of may be cured thereby. The pain has its seat in the liver. Look to your digestion also; let your food be very light for a time; and write again in a short time, after trying this advice.

Mariner.—See and follow advice given to "A City-Clerk," in present number of Health.

A New Reader.—We fancy you are of an extremely nervous temperament. Try what a half-dose of the tonic will effect. No objection to using tonic and inhalation at same time; but our principal advice to you is to rest entirely for a time from all work whatever, and live generously. You are over-anxious about yourself. Try rest first. Glad to be of further service.

E. F. H.—No; moderate smoking will not harm you. See and follow advice to "G. Herbert," in present number of Health. Remember that you suffer from no actual disease; only weakness, which time and observance of advice above indicated will cure.

H. W.—(You must be careless to address your letter to the "Printing-office" instead of to the "Editor." Please note that the Editor, not the "Printing-office," has charge of a journal.) Yours is simply a case for wise digestive treatment. Let your food for a time be light and nourishing, and take a little Morson's "Pepsine" with meals, and a little "Æsculap" Water in the mornings as a mild aperient. We do not think you need fear any other ailment—provided you are not "ruptured" in any way. Touch the warts with aromatic vinegar, and be careful not to let the vinegar come in contact with the skin.

J. N. Mackie.—We do not think you could incur harm by trying the food-experiment you name very cautiously, avoiding excess, beginning with little, and giving it up on appearance of any symptoms of the old trouble.

An Anxious Mother.—The case you name (and with which we greatly sympathise) is one in which all the symptoms (mouth and otherwise) arise from the original nervous disorder from which the child still suffers. Our best advice to you is simply to do all in your power to keep up his general health. Attend strictly to food and warmth, and, above all, don't force his education. We question

[*Continued on page* 288.

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F. G.—The case is a complex one. We should recommend hot salt baths, careful living, avoidance of all acid diet, and light food (chiefly milk, &c.) for a time. There likely exists, however, a complication of troubles, which only a consultation with an experienced physician will relieve. The skin-disease is only a symptom of the constitutional and general disorder.

W. R. P.—Try for dandriff sponging your head several times a day with a strong solution of borax and water; or you may try applying glycerine and borax at bedtime. This to be kept on all night. Failing these (which should be first tried), try borax ointment, made by adding 1 part borax to eight of simple ointment or Vaseline.

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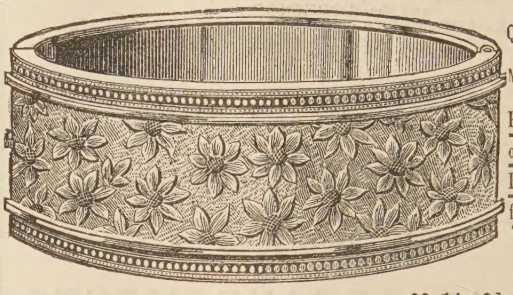

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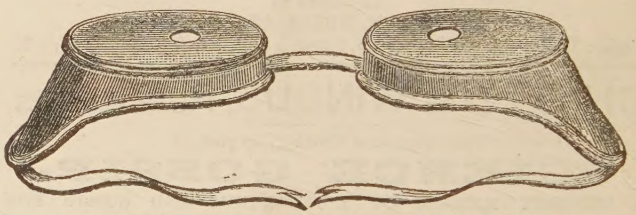

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